

IN THE CLAIMS:

1. (Currently Amended) A method for forming a wiring comprising the steps of:
 - performing a liquid-repellent treatment on a surface;
 - performing selectively a lyophilic treatment on a region of the surface to form a lyophilic region and a liquid-repellent region; and
 - forming a wiring on the lyophilic region by dropping a composition including a conductive material.
2. (Currently Amended) A method for forming a wiring comprising the steps of:
 - forming a liquid-repellent region on a surface;
 - forming selectively a lyophilic region in the liquid-repellent region so that the surface includes the lyophilic region and the liquid-repellent region; and
 - forming the wiring on the lyophilic region by dropping a composition including a conductive material.
3. (Currently Amended) A method for forming a wiring comprising the steps of:
 - forming a liquid-repellent region on a surface by a plasma treatment;
 - forming selectively a lyophilic region in the liquid-repellent region so that the surface includes the lyophilic region and the liquid-repellent region; and
 - forming the wiring on the lyophilic region by dropping a composition including a conductive material.
4. (Original) The method for forming a wiring according to Claim 3, wherein the plasma treatment is performed at a pressure of 100 Torr to 1000 Torr.
5. (Currently Amended) The method for forming a wiring according to Claim [[4]] 3, wherein the plasma treatment is performed under an atmospheric pressure or a pressure in a neighborhood of an atmospheric pressure by using air, oxygen or nitrogen as a treatment gas.

6. (Currently Amended) The method for forming a wiring according to ~~Claims~~ Claim 2 or 3, wherein the lyophilic region is selectively formed by irradiating the liquid-repellent region with laser light.

7. (Currently Amended) The method for forming a wiring according to ~~any one of Claims~~ Claim 2 or 3, wherein a region that is less liquid-repellent than the liquid-repellent region is formed as the lyophilic region.

8. (Original) The method for forming a wiring according to any one of Claims 1 to 3, wherein the composition is dropped by an ink-jetting method.

9. (Currently Amended) A method for forming a wiring comprising the steps of:
forming a liquid-repellent region by forming a film containing fluorine on a surface;
forming selectively a lyophilic region in the liquid-repellent region so that the surface includes the lyophilic region and the liquid-repellent region; and
forming the wiring on the lyophilic region by dropping a composition including a conductive material.

10. (Original) The method for forming a wiring according to Claim 9, wherein a Teflon film or a silane coupling agent is formed to form the liquid-repellent region.

11. (Currently Amended) The method for forming a wiring according to ~~Claims 9 or 10~~ Claim 9, wherein the lyophilic region is selectively formed by irradiating the liquid-repellent region with laser light.

12. (Currently Amended) The method for forming a wiring according to ~~Claims 9 or 10~~ Claim 9, wherein a region that is less liquid-repellent than the liquid-repellent region is formed as the lyophilic region.

13. (Currently Amended) The method for forming a wiring according to ~~Claims 9 or 10~~ Claim 9, wherein the composition is dropped by an ink-jetting method.

14. (Currently Amended) A method for manufacturing a thin film transistor comprising the steps of:

performing a liquid-repellent treatment on a surface to form a first liquid-repellent region;

performing selectively a lyophilic treatment on a region of the surface to form a first lyophilic region so that the surface includes the first lyophilic region and the first liquid-repellent region; and

forming a conductive film on the first lyophilic treatment region by dropping a composition including a conductive material.

15. (Currently Amended) A method for manufacturing a thin film transistor comprising the steps of:

forming a first liquid-repellent region on a surface;

forming selectively a first lyophilic region in the first liquid-repellent region so that the surface includes the first lyophilic region and the first liquid-repellent region; and

forming ~~[[the]]~~ a conductive film on the first lyophilic region by dropping a composition including a conductive material.

16. (Currently Amended) A method for manufacturing a thin film transistor comprising the steps of:

forming a first liquid-repellent region by ~~performing~~ a plasma treatment on a surface for forming a gate electrode;

forming selectively a first lyophilic region in the first liquid-repellent region;

forming the gate electrode in the first lyophilic region by dropping a composition including a conductive material;

forming a second liquid-repellent region by a plasma treatment on a surface for forming a source electrode and a drain electrode;

forming selectively a second lyophilic region in the second liquid-repellent region;
and

forming the source electrode and the drain electrode in the second lyophilic region by dropping a composition including a conductive material.

17. (Currently Amended) A method for manufacturing a thin film transistor comprising the steps of:

- forming a first liquid-repellent region by ~~performing~~ a plasma treatment on a substrate;
- forming selectively a first lyophilic region in the first liquid-repellent region;
- forming a gate electrode in the first lyophilic region of the substrate by dropping a composition including a conductive material;
- forming a gate insulating film to cover the gate electrode;
- forming a semiconductor film over the gate electrode;
- forming a semiconductor film having one conductivity over the semiconductor film;
- forming a second liquid-repellent region by a plasma treatment on the semiconductor film having one conductivity and the gate insulating film;
- forming selectively a second lyophilic region in the second liquid-repellent region;
- and
- forming a source electrode and a drain electrode in the second lyophilic region of the semiconductor film having one conductivity and the gate insulating film by dropping a composition including a conductive material.

18. (Currently Amended) A method for manufacturing a thin film transistor, comprising the steps of:

- forming a source electrode and a drain electrode;
- forming a semiconductor film over the source electrode and the drain electrode;
- forming a first liquid-repellent region by ~~performing~~ a plasma treatment on a surface for forming a gate electrode in an upper portion of the semiconductor film;
- forming selectively a first lyophilic region in the first liquid-repellent region; and
- forming the gate electrode in the first lyophilic region of the surface of ~~the gate electrode~~ the semiconductor film by dropping a composition including a conductive material.

19. (Currently Amended) A method for manufacturing a thin film transistor, comprising the steps of:

- forming a source electrode and a drain electrode over a base film;
- forming a semiconductor film over the source electrode and the drain electrode;
- forming a first liquid-repellent region by ~~performing~~ a plasma treatment on the semiconductor film;
- forming selectively a first lyophilic region in the first liquid-repellent region;
- forming a mask in the first lyophilic region of the semiconductor film by dropping a composition including a material of the mask;
- patterning the semiconductor film by using the mask;
- forming a gate insulating film to cover the semiconductor film;
- forming a second liquid-repellent region by ~~performing~~ a plasma treatment on the gate insulating film;
- forming selectively a second lyophilic region in the second liquid-repellent region;

and

- forming a gate electrode in the second lyophilic region of the gate insulating film by dropping a composition including a conductive material.

20. (Currently Amended) A method for manufacturing a thin film transistor comprising the steps of:

- forming a first liquid-repellent region by ~~performing~~ a plasma treatment on a base film;
- forming selectively a first lyophilic region in the first liquid-repellent region;
- forming a source electrode and a drain electrode in the first lyophilic region of the base film by dropping a composition including a conductive material;
- forming a semiconductor film over the source electrode and the drain electrode;
- forming a second liquid-repellent region by a plasma treatment on the semiconductor film;
- forming selectively a second lyophilic region in the second liquid-repellent region;
- forming a mask in the second lyophilic region of the semiconductor film by dropping a composition including a material of the mask;

patterning the semiconductor film by using the mask;
forming a gate insulating film to cover the semiconductor film;
forming a third liquid-repellent region by ~~performing~~ a plasma treatment on the gate insulating film;
forming selectively a third lyophilic region in the third liquid-repellent region; and
forming a gate electrode in the third lyophilic region of the gate insulating film by dropping a composition including a conductive material.

21. (Currently Amended) The method for manufacturing a thin film transistor according to ~~any one of Claims 14 to 20~~ Claim 14 or 15, wherein the first liquid-repellent region is formed by forming a CF₂ bond on the surface by ~~[[the]]~~ a plasma treatment.

22. (Currently Amended) The method for manufacturing a thin film transistor according to any one of Claims 14 ~~[[to 20]]~~, 15, and 18, further comprising the steps of:

forming an interlayer insulating film ~~over the thin film transistor~~;
forming an opening portion in the interlayer insulating film;
forming a second liquid-repellent region in a surface of the opening portion and the interlayer insulating film by ~~performing~~ a plasma treatment on the interlayer insulating film in which the opening portion is formed;
forming selectively a second lyophilic region in the opening portion of the second liquid-repellent region; and
forming a wiring to be connected to a source electrode or a drain electrode ~~of the thin film transistor~~ through the opening portion by dropping a composition including a conductive material.

23. (Currently Amended) The method for manufacturing a thin film transistor according to any one of Claims 14 ~~[[to 20]]~~, 15, and 18, wherein the first liquid-repellent region is irradiated with laser light to selectively form the first lyophilic region.

24. (Previously Presented) The method for manufacturing a thin film transistor according to any one of Claims 14 to 20, wherein the composition is dropped by an ink-jetting method.

25. (Currently Amended) A method for manufacturing a thin film transistor, comprising the steps of:

- forming a film containing fluorine;
- forming selectively a first lyophilic region in the film containing fluorine so that the film containing fluorine includes the first lyophilic region and a liquid-repellent region;
- forming a gate electrode on the first lyophilic region by dropping a composition including a conductive material; and
- performing a heat treatment for baking the gate electrode, and removing the film containing fluorine by the heat treatment.

26. (Currently Amended) A method for manufacturing a thin film transistor comprising the steps of:

- forming a first film containing fluorine;
- forming selectively a ~~liquid-repellent~~ first lyophilic region in the first film containing fluorine;
- forming a gate electrode in the first lyophilic region by dropping a composition including a conductive material;
- performing a first heat treatment to bake the gate electrode, and removing the first film containing fluorine by the first heat treatment;
- forming a gate insulating film to cover the gate electrode;
- forming a semiconductor film over the gate electrode;
- forming a semiconductor film having one conductivity over the semiconductor film;
- forming a second film containing fluorine over the semiconductor film having one conductivity and the gate insulating film;
- forming selectively a second lyophilic region in the second film containing fluorine;

forming a source electrode and a drain electrode in the second lyophilic region of the semiconductor film having one conductivity and the gate insulating film by dropping a composition including a conductive material; and

performing a second heat treatment to bake the source electrode and the drain electrode, and removing the second film containing fluorine by the second heat treatment.

27. (Currently Amended) The method for manufacturing a thin film transistor according to Claim 25 [[or 26]], wherein a film including a Teflon or a silane coupling agent is formed as the film containing fluorine.

28. (Currently Amended) The method for manufacturing a thin film transistor according to ~~Claims 25 or 26~~ Claim 25, further comprising the steps of:

forming an interlayer insulating film ~~over the thin film transistor~~;

forming an opening portion in the interlayer insulating film;

forming a liquid-repellent region in a surface of the opening portion and the interlayer insulating film by ~~performing~~ a plasma treatment on the interlayer insulating film in which the opening portion is formed;

forming selectively a second lyophilic region in the opening portion of the liquid-repellent region; and

forming a wiring to be connected to a source electrode or a drain electrode ~~of the thin film transistor~~ through the opening portion by dropping a composition including a material of the wiring.

29. (Currently Amended) The method for manufacturing a thin film transistor according to ~~Claims 25 or 26~~ Claim 25, wherein ~~the liquid-repellent region~~ the film containing fluorine is irradiated with laser light to selectively form the first lyophilic region.

30. (Currently Amended) The method for manufacturing a thin film transistor according to ~~Claims 25 or 26~~ Claim 25 or 26, wherein the composition is dropped by an ink-jetting method.

31. (Currently Amended) A droplet discharging method, comprising the steps of:

forming a lyophilic region by irradiating selectively ~~[[on]]~~ an object to be treated in which a liquid-repellent region is formed with light by a light irradiation unit so that the object to be treated includes the lyophilic region and the liquid-repellent region; and

discharging a droplet onto the lyophilic region by a droplet discharging unit, in a treatment chamber including the droplet discharging unit and the light irradiation unit.

32. (Currently Amended) A droplet discharging method, using a treatment apparatus in which a first treatment chamber having a plasma unit and a dielectric, and a second treatment chamber having a droplet discharging unit and a light irradiation unit, comprising the steps of:

forming a liquid-repellent region in an object to be treated by the plasma unit and the dielectric in the first treatment chamber;

transporting the object to be treated into the second treatment chamber without being exposed to the atmosphere;

forming selectively a lyophilic region in the object to be treated in which a liquid-repellent region is formed by the light irradiation unit in the second treatment chamber so that the object to be treated includes the lyophilic region and the liquid-repellent region; and

discharging a droplet onto the lyophilic region by the droplet discharging unit.

33. (Original) The droplet discharging method according to Claim 31 or 32, wherein the droplet discharging unit and the light irradiation unit are integrally formed.

34. (Currently Amended) The droplet discharging method according to ~~Claims 31 or 32~~ Claim 31 or 32, wherein the light irradiation unit includes laser light.

35. (Currently Amended) The droplet discharging method according to ~~Claims 31 to 32~~ Claim 31 or 32, wherein the ~~composition~~ droplet is dropped by an ink-jetting method.

36. (New) The method for manufacturing a thin film transistor according to Claim 16, wherein each of the first liquid-repellent region and the second liquid-repellent region is formed by forming a CF₂ bond on the surface for forming a gate electrode and the surface for forming a source electrode and a drain electrode by the plasma treatment.

37. (New) The method for manufacturing a thin film transistor according to Claim 17, wherein each of the first liquid-repellent region and the second liquid-repellent region is formed by forming a CF₂ bond on the substrate and on the semiconductor film by the plasma treatment.

38. (New) The method for manufacturing a thin film transistor according to Claim 18, wherein the first liquid-repellent region is formed by forming a CF₂ bond on the surface by the plasma treatment.

39. (New) The method for manufacturing a thin film transistor according to Claim 19, wherein each of the first liquid-repellent region and the second liquid-repellent region is formed by forming a CF₂ bond on the semiconductor film and on the gate insulating film by the plasma treatment.

40. (New) The method for manufacturing a thin film transistor according to Claim 20, wherein each of the first liquid-repellent region, the second liquid-repellent region, and the third liquid-repellent region is formed by forming a CF₂ bond on the base film and on the semiconductor film by the plasma treatment.

41. (New) The method for manufacturing a thin film transistor according to any one of Claims 16, 17, and 19, further comprising the steps of:

- forming an interlayer insulating film;
- forming an opening portion in the interlayer insulating film;
- forming a third liquid-repellent region in a surface of the opening portion and the interlayer insulating film by a plasma treatment on the interlayer insulating film in which the opening portion is formed;

forming selectively a lyophilic region in the opening portion of the third liquid-repellent region; and

forming a wiring to be connected to the source electrode or the drain electrode through the opening portion by dropping a composition including a conductive material.

42. (New) The method for manufacturing a thin film transistor according to Claim 20, further comprising the steps of:

forming an interlayer insulating film;

forming an opening portion in the interlayer insulating film;

forming a fourth liquid-repellent region in a surface of the opening portion and the interlayer insulating film by a plasma treatment on the interlayer insulating film in which the opening portion is formed;

forming selectively a lyophilic region in the opening portion of the fourth liquid-repellent region; and

forming a wiring to be connected to the source electrode or the drain electrode through the opening portion by dropping a composition including a conductive material.

43. (New) The method for manufacturing a thin film transistor according to any one of Claims 16, 17, and 19, wherein each of the first liquid-repellent region and the second liquid-repellent region is irradiated with laser light to selectively form the first lyophilic region and the second lyophilic region.

44. (New) The method for manufacturing a thin film transistor according to Claim 20, wherein each of the first liquid-repellent region, the second liquid-repellent region, and the third liquid-repellent region is irradiated with laser light to selectively form the first lyophilic region, the second lyophilic region, and the third lyophilic region.

45. (New) The method for manufacturing a thin film transistor according to Claim 26, wherein a film including a Teflon or a silane coupling agent is formed as the first film containing fluorine and the second film containing fluorine.

46. (New) The method for manufacturing a thin film transistor according to Claim 26, further comprising the steps of:

- forming an interlayer insulating film;

- forming an opening portion in the interlayer insulating film;

- forming a liquid-repellent region in a surface of the opening portion and the interlayer insulating film by a plasma treatment on the interlayer insulating film in which the opening portion is formed;

- forming selectively a lyophilic region in the opening portion of the liquid-repellent region; and

- forming a wiring to be connected to the source electrode or the drain electrode through the opening portion by dropping a composition including a material of the wiring.

47. (New) The method for manufacturing a thin film transistor according to Claim 26, wherein each of the first film containing fluorine and the second film containing fluorine is irradiated with laser light to selectively form the first lyophilic region and the second lyophilic region.